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1 Piece T5MWN MA1

July 2000

ADC System Components
Accessories

Section 9

Installation, Repair and Maintenance of the UPS

(**U**ninterruptable **P**ower **S**upply)

Types: Smart UPS 600 / 700

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1 General Information

- This documentation describes the installation of an UPS (Uninterruptable Power Supply) for an already installed system.
- If the Processing Station is delivered included the UPS, the installation and activation is already done. The UPS just has to be connected.
- For the installation of the UPS the MIMOSA CD, which contains the Power Chute Software, is necessary. UPS can only be installed on the Processing Station.
- All targets (monitor, hard disk(s), DAT tape) connected to VIPS have to be connected to the UPS as well.

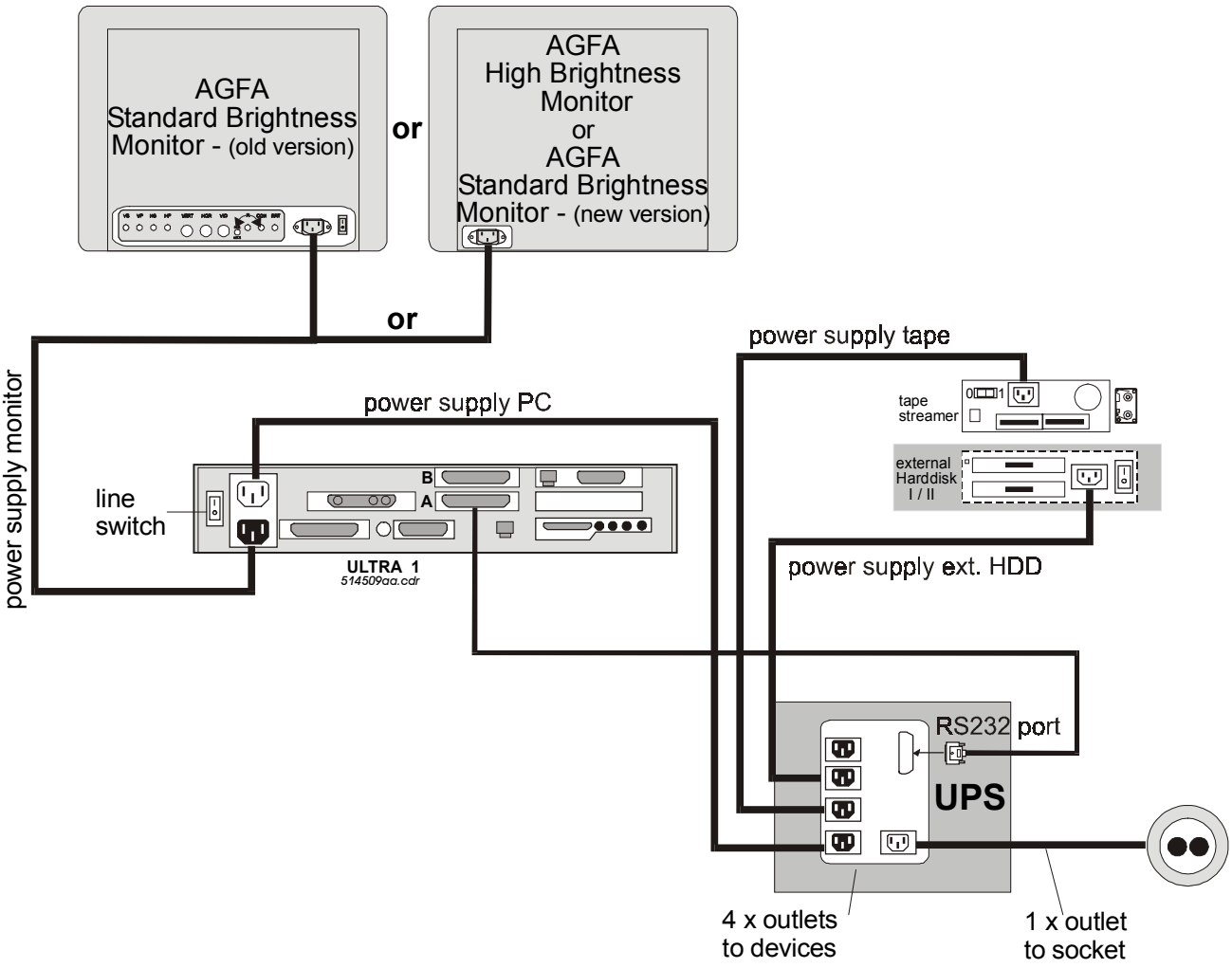
- If the UPS has to be disconnected in case of defect, a deactivation of the UPS Software is necessary as well (see point “7 Deactivation of UPS and PowerChute Software” page 11).
  Otherwise booting problems may occur.

2 Features / Technical Data

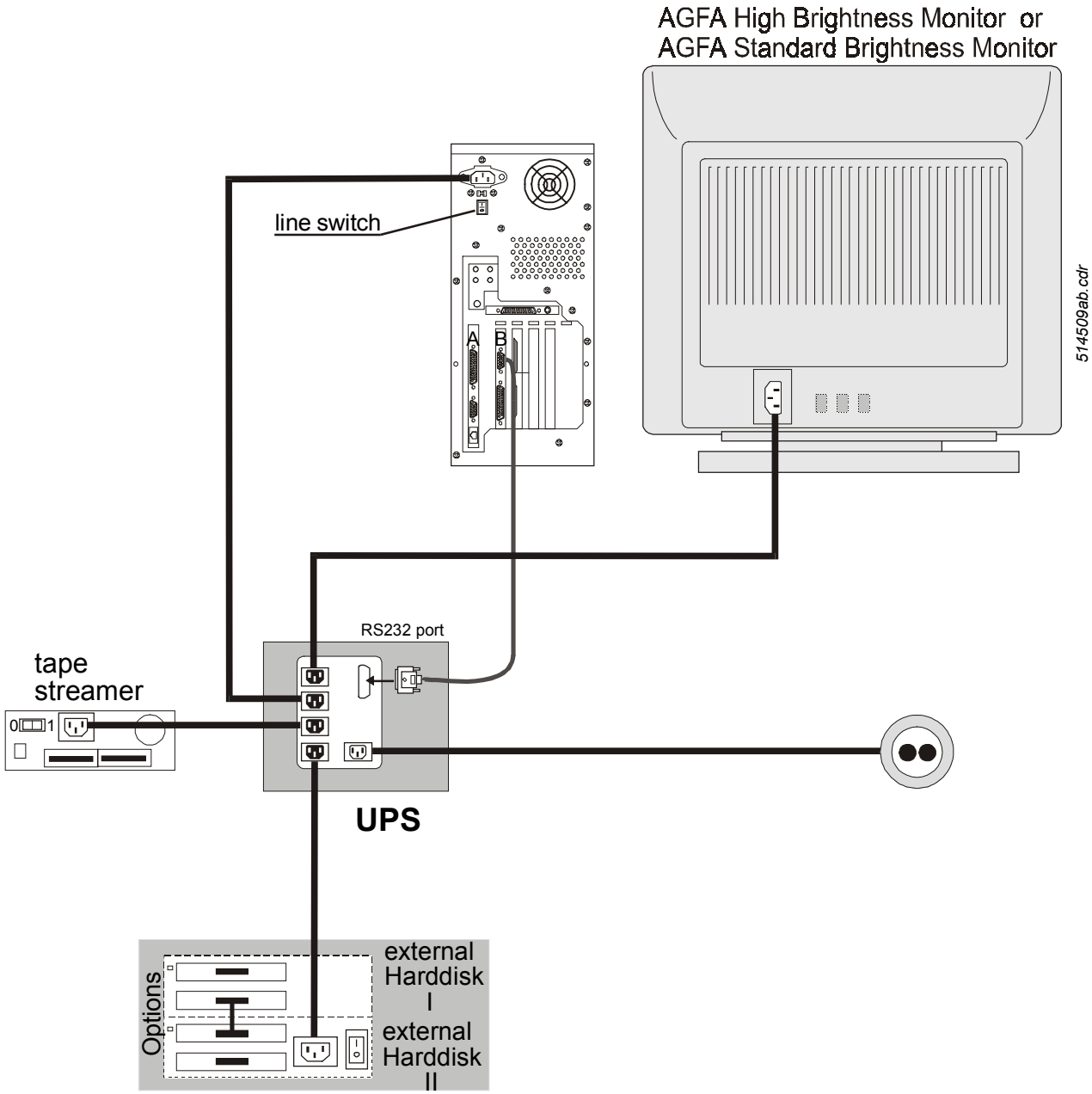
- The UPS performs a controlled shutdown within 5 minutes after a power failure or disconnection of mains.
- UPS beeps in case of power failure. Software causes warning message "*Power Failure*" (ID: G043)
- Recognizes automatically if power returns and stops shutdown procedure within 5minutes (Warning Message "*Power is up again*", ID: G044) or automatically starts up / reboots Processing Station respectively
- Buffers short power interruptions
- **Hardware:** Smart UPS 600 (APC American Power Conversion) 220-240V / 400W
  Smart UPS 700 (APC American Power Conversion) 220-240V / 450W

3 Connection Diagrams

3.1 Connection diagram of UPS to ULTRA 1 Processing Station



3.2 Connection diagram of UPS to ULTRA 10 Processing Station



4 Operation

For detailed information on the operation of UPS please refer to the corresponding user manual.

5 Scope of Delivery

1 x UPS

1 x standard mains cable (female)

4 x standard mains cable (male)

2 x control cable

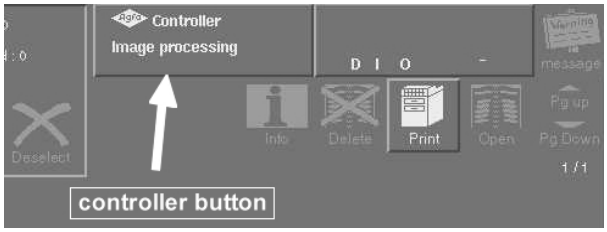
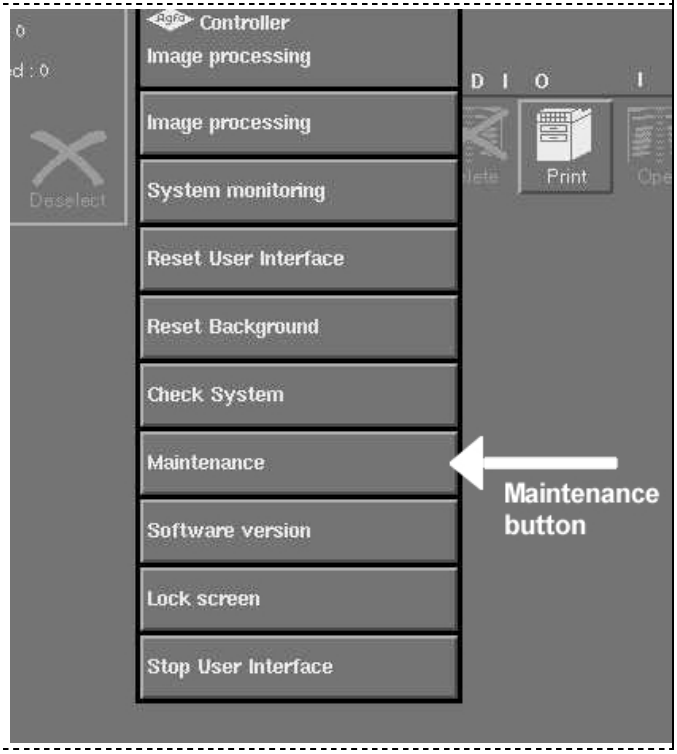
1 x CD-ROM with Software "Power Chute"

Manuals for UPS and "Power Chute" Software

6 Installation Procedure

The following installation procedure is only valid for APC Smart UPS 600/700

6.1 Hardware Connection

No.	Procedure Steps	Display / Comment
1.		
2.	• Click <Controller>	

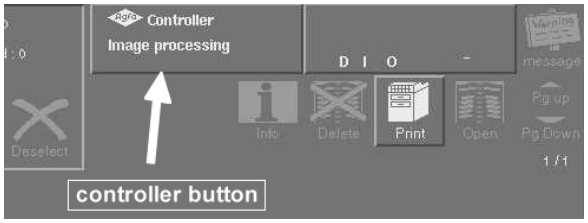
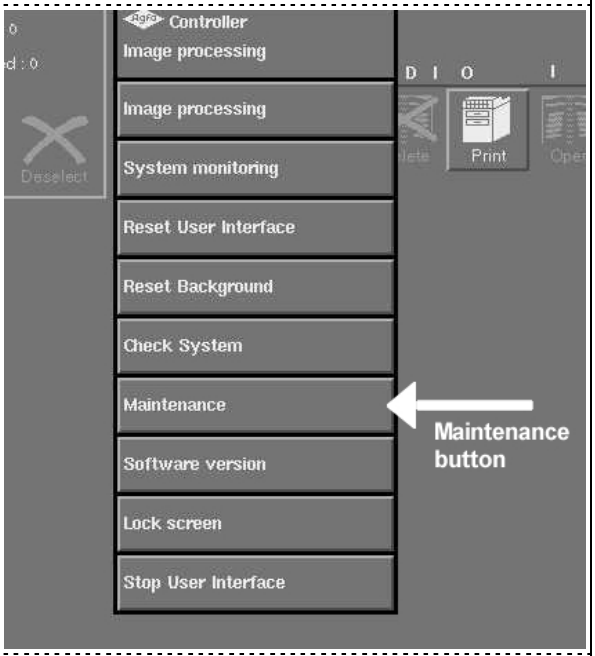
No.	Procedure Steps	Display / Comment

3.	• Select **<Maintenance>** in the controller pull-down menu.	`Maintenance password >`
		`Maintenance Password ok.`
		`No match`

4.	• Enter maintenance password and hit **<Return>**.	`1 Connect  Connect via Telnet to a network node`
		`2 Install  Tools to setup DIPS/VIPS`
		`3 Repair  Tools to repair DIPS/VIPS`
		`4 Tools  UNIX Tools`
		`5 Help  Documentation about (V)DIPS`
		
		`Enter selection (// to exit) [?,??,q]:`

5.	• Select: **2** `install` and hit **<Return>** **3** `Hardware` and hit **<Return>** **2** `PowerChute` and hit **<Return>** **1** `Connect` and hit **<Return>**	`OK to shut down the system`
6.	• type **y**	the system shuts down
7.	• When the System is down: switch off the Processing Station and all peripherals with their main switches.	
8.	• Connect the power cable of the Processing Station to the mains input of the UPS.	see connection diagram, item 3.
9.	• Use supplied cables to connect Processing Station, monitor, external hard disks and DAT tape to the UPS main outlets.	see connection diagram, item 3.
10.	• Use supplied black serial cable to connect UPS with serial port B of the Processing Station.	

6.2 Software Installation

No.	Procedure Steps	Display / Comment
1.	• Switch on first all peripherals and then the Processing Station with their own main switch.	
2.	• Switch on UPS with the main switch - at the back side (UPS 600) - at the front side (UPS 700).	
3.	• Push "I" button on the front panel of the UPS to start up the Processing Station and all peripherals. Switch on the monitor.	The Processing Station boots and login prompt appears.
4.	• Login!	
5.	• Click **<Controller>**	

6.	• Select **<Maintenance>** in the controller pull-down menu.	`Maintenance password >`
		`Maintenance Password ok.`
		`No match`

No	Procedure Steps	Display / Comment

7.	• enter maintenance password and hit **<Return>**.	`1 Connect  Connect via Telnet to a network node`
		`2 Install  Tools to setup DIPS/VIPS`
		`3 Repair  Tools to repair DIPS/VIPS`
		`4 Tools  UNIX Tools`
		`5 Help  Documentation about (V)DIPS`
		
		`Enter selection (// to exit) [?,??,q]:`

8.	• Select: **2** install and hit **<Return>** **3** `Hardware` and hit **<Return>** **2** `PowerChute` and hit **<Return>** **2** `Install` and hit **<Return>**	The following line appears: `Put the CD into the CD player and hit return:`
9.	• Insert MIMOSA CD into CD ROM-drive.	Wait until the file manager window appears: `File Manager`
10.	• Click on **<File>** and then **<Close>** in the file manager window.	`Put the CD into the CD player and hit return:`
11.	• Hit **<Return>**.	`Select the media type from which you will install: [?]`
12.	• Type **1** `CD-ROM` and hit **<Return>**.	`Enter path to mounted CD ROM [/cdrom/unnamed_cdrom/SO/powerchute]:`
13.	• Hit **<Return>**.	`Would you like to see an overview of the Installation? [y/n,q]`
14.	• Type **n** and hit **<Return>**.	`Which Parts of PowerChute Plus for Unix do you wish to install?`
15.	• Type **3** `Both the User Interface and Daemon Modules` and hit `<Return>`.	`Which APC Hardware will PowerChute Plus for Unix be running with`
16.	• Type **2** Smart-UPS and hit **<Return>**.	`Do you currently have a MeasureUps attached to the UPS? [y/n,q]`
17.	• Type **n** and hit **<Return>**.	`On which Operating System are you installing? [?]`

No	Procedure Steps	Display / Comment
18.	• Type **1** Solaris 2.X for Sparc and hit **<Return>**.	Do you currently have TCP/IP installed?
19.	• Type **n**	Which color scheme do you wish to use [1]?
20.	• Type **2** Use Monochrome Color scheme and hit **<Return>**.	Which serial device will be dedicated to PowerChute Plus for Unix
21.	• Type **2** to select </dev/ttyb> and hit **<Return>** (if UPS is connected to port B)	---------- You should have the black cable, #940-0024C attached to /dev/ttyb or /dev/ttya respectively. **Please verify.** ----------
22.	• Verify the cable connection.	Where do you wish to install PowerChute Plus for Unix? [/usr/lib/powerchute]
23.	• Hit **<Return>**.	---------- PRODUCT: PowerChute Plus for Unix INSTALL USER INTERFACE: TRUE INSTALL DAEMON : TRUE OPERATING SYSTEM: Solaris 2.X for Sparc INSTALL PATH: /usr/lib/powerchute PATH TO MOUNTED CD ROM: e.g. /cdrom/powerchute DEDICATED TTY: /dev/ttyb (or /dev/ttya) UPS TYPE : : SMART UPS MeasureUPS INSTALLED : FALSE PREVIOUS VERSION FOUND : FALSE INSTALLING AS ROOT : TRUE TCP/IP Installed : FALSE ---------- Are the above selections correct?
24.	• Type **y** and hit **<Return>**.	copying files After a while the line new password appears
25.	• Enter the same password as used for the maintenance menu.	Re-enter new password
26.	• Confirm the password.	OK to reboot the system :
27.	• Type **y**	The system reboots

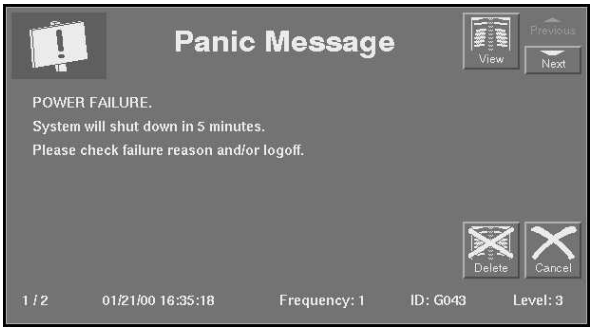
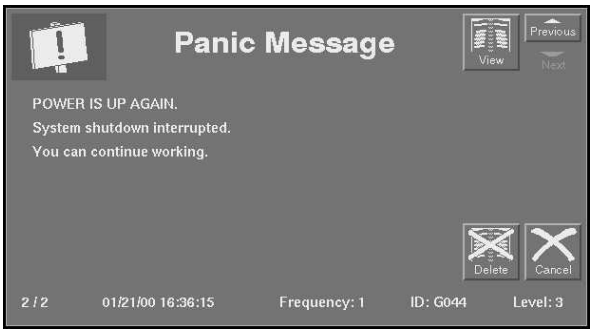
No	Procedure Steps	Display / Comment
28.	• When the Processing Station has been shut down, switch it on again with the <on-off key> of the keyboard.	The Processing Station boots and login prompt appears.
29.	• Login!	`The UI starts`
30.	• Click **<Controller>**.	

31.	• Select **<Maintenance>** in the controller pull-down menu.	`Maintenance password >`
		`Maintenance Password ok.`
		`No match`

32.	• Enter maintenance password and hit **<Return>**.	`1 Connect  Connect via Telnet to a network node`
		`2 Install  Tools to setup DIPS/VIPS`
		`3 Repair  Tools to repair DIPS/VIPS`
		`4 Tools  UNIX Tools`
		`5 Help  Documentation about (V)DIPS`
		
		`Enter selection (// to exit) [?,??,q]:`

33.	• Select: **2** `install` and hit **<Return>** **3** `Hardware` and hit **<Return>** **2** `PowerChute` and hit **<Return>**.	
34.	• Check that the SW is initialized and activated in that the following two lines are displayed with “YES” PowerChute software initialized: **YES** PowerChute software is running: **YES**	`Exit the menu`
35.	• Type **q** (three times)	`Enter selection:`
36.	• Type **4** `Tools` and hit **<Return>** **9** `CDRom Eject` and hit **<Return>**.	CD-Rom is ejected
37.	• Remove the CD ROM	
38.	• Type **q** to exit <Maintenance menu>	The UI starts. Installation done.

6.3 Performance Test

No	Procedure Steps	Display / Comment
1.	• Unplug the mains cable leading to the wall socket	The following `Panic Message` should appear: 
2.	• Connect the mains cable again	The following `Panic Message` should appear: 

Instruct the local user about the operation of the UPS.

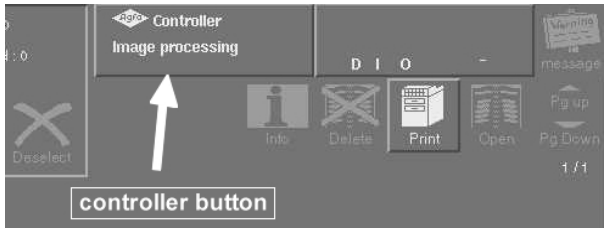
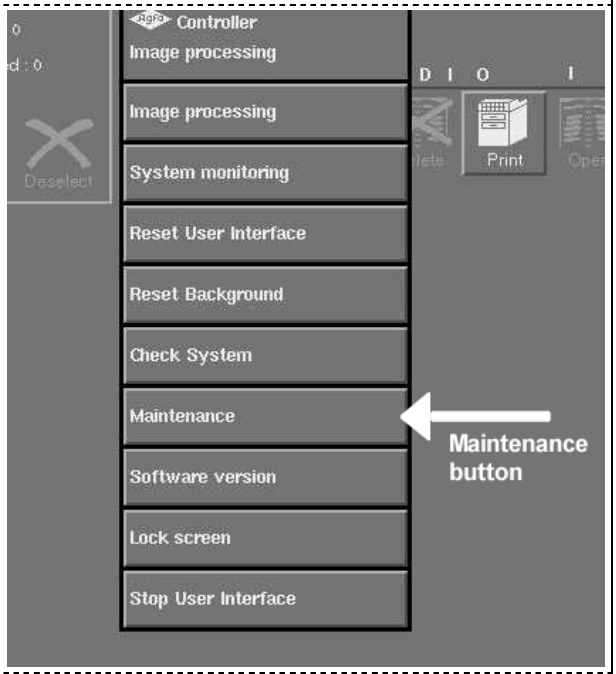
7 Deactivation of UPS and PowerChute Software

When do you have to deactivate the UPS?

- if UPS is defective
- if Battery is defective or flat

If the UPS has to be disconnected in case of defect, a deactivation of the UPS Software is necessary as well. Otherwise booting problems may occur.

If the UPS has to be connected again, only **<ActivatePowerChute>** has to be done!

No.	Procedure Steps	Display / Comment
1.		
2.	• Click <Controller>	
3.	• Select **<Maintenance>** in the controller pull-down menu.	Maintenance password > Maintenance Password ok. No match

No.	Procedure Steps	Display / Comment
4.	• Enter maintenance password and hit **<Return>**.	1 Connect Connect via Telnet to a network node 2 Install Tools to setup DIPS/VIPS 3 Repair Tools to repair DIPS/VIPS 4 Tools UNIX Tools 5 Help Documentation about (V)DIPS Enter selection (// to exit) [?,??,q]:
5.	• Select: **2** install and hit **<Return>** **3** Hardware and hit **<Return>** **2** PowerChute and hit **<Return>** **4** deactivate and hit **<Return>**	OK to shut down the system
6.	• Type **y**	The shut down starts.
7.	• When the PS has shut down, turn off UPS with UPS ENABLE SWITCH on the rear. Switch off Processing Station and peripherals with their main switches.	
8.	• Move power cord from the main input of the UPS to the Processing Station.	
9.	• Connect the other peripherals from UPS to the mains.	
10.	• Disconnect black serial cable from the serial port B of the Processing Station.	
11.	• Switch on all components with their main switches.	The Processing Station boots and login prompt appears.
12.	• login!	The UI starts
13.	• Click **<Controller>**	
14.	• Select **<Maintenance>** in the controller pull-down menu.	Maintenance password > Maintenance Password ok. No match

No.	Procedure Steps	Display / Comment
15.	• enter maintenance password and hit **<Return>**	1 Connect Connect via Telnet to a network node 2 Install Tools to setup DIPS/VIPS 3 Repair Tools to repair DIPS/VIPS 4 Tools UNIX Tools 5 Help Documentation about (V)DIPS Enter selection (// to exit) [?,??,q]:
16.	• select: **2** install and hit **<Return>** **3** Hardware and hit **<Return>** **2** PowerChute and hit **<Return>**	
17.	• Check that the Software is reinitialized and deactivated in that the following two lines are displayed with “NO” PowerChute software initialized : **NO** PowerChute software is running: **NO**	
18.	• type **q** (4 times) to exit **<Maintenance menu>**.	
19.	• Hit **<Return>**.	UI starts. Deactivation done.

8 Hardware-Problems UPS

8.1 Warning Message

"`Power Failure`" and UPS beeps

8.2 Reason

- Disconnection from the mains
- UPS or Battery is defective

8.3 Solution

- check all cables or connectors
- replace the UPS or the battery

Before disconnecting the UPS, a deactivation of the UPS software has to be executed.

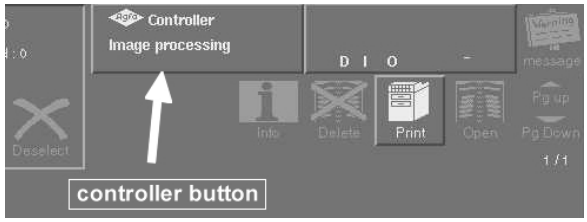
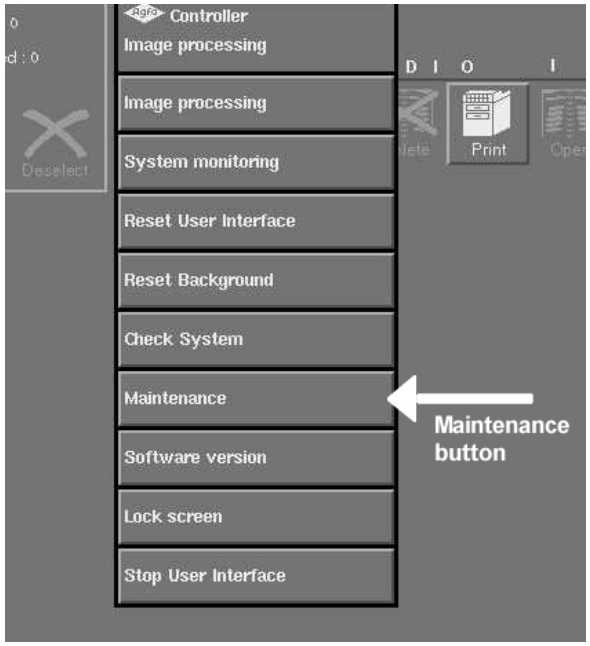
8.3.1 Deactivation of the UPS-Software

For the deactivation of the UPS software see item 7 of this section.

8.3.2 Reactivation of the UPS-Software

After replacement of the UPS or the battery a reactivation of the UPS software is necessary:

- connect Processing Station, monitor, external harddisks and DAT tape to the UPS main outlets
- connect the mains input to the UPS
- connect serial black cable to connect UPS with serial port B (A) of the Processing Station.

No.	Procedure Steps	Display / Comment
1.	• Switch on first all peripherals and then the Processing Station with their own main switch.	
2.	• Switch on UPS with the main switch - at the back side (UPS 600) – at the front side (UPS 700).	
3.	• Push “I” button on the front panel of the UPS to start up the Processing Station and all peripherals. Switch on the monitor.	The Processing Station boots and login prompt appears.
4.	• login!	
5.	• Click <Controller>.	
6.	• Select <Maintenance> in the controller pull-down menu.	Maintenance password > Maintenance Password ok. No match

No.	Procedure Steps	Display / Comment
7.	• Enter maintenance password and hit **<Return>**.	1 Connect Connect via Telnet to a network node 2 Install Tools to setup DIPS/VIPS 3 Repair Tools to repair DIPS/VIPS 4 Tools UNIX Tools 5 Help Documentation about (V)DIPS Enter selection (// to exit) [?,??,q]:
8.	• Select: **2** install and hit **<Return>** **3** Hardware and hit **<Return>** **2** PowerChute and hit **<Return>** **3** Activate and hit **<Return>**.	
9.	• type **q** (4 times) to exit **<Maintenance menu>**.	
10.	• Hit **<Return>**.	UI starts. Deactivation done.

9 Battery Replacement Procedure for UPS

9.1 General

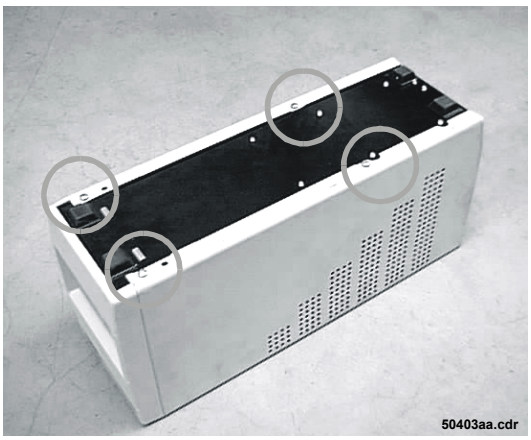
- The UPS gives a warning that the batteries have to be exchanged.
- Both, AP600 and AP700, have the same batteries inside:

Battery	12V – 7.2Ah rechargeable sealed lead.acid battery (2x)
Total dimensions (W x H x L)	13 x 10 x 15 (cm)
Total weight	5 (kg)

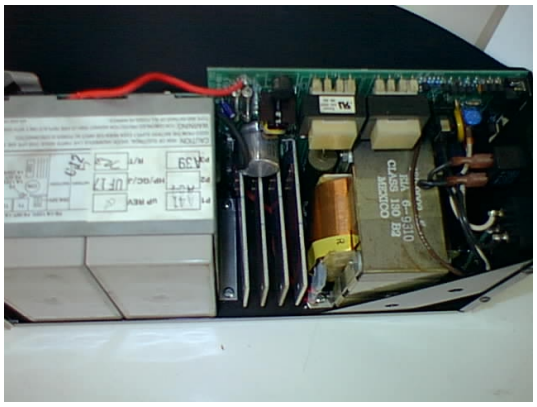
UPS AP600

UPS AP700

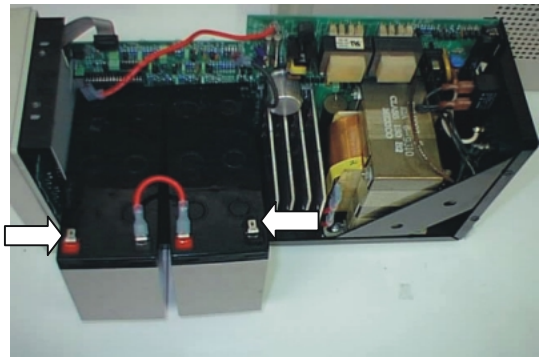
9.2 Battery Replacement Procedure for UPS AP 600



- Remove the metal cover by loosening the 4 screws on the bottom of the UPS (see circles). Pull the cover backwards to remove.



- Remove the metal plate that holds the batteries.
  Do not touch the exposed printed circuit board!
- Loosen 5 screws, 2 on top, 2 at the bottom and 1 that is fixed through the circuitboard on the back of the metal plate.
  Therefore remove the plastic plate that is protecting the back of the circuitboard



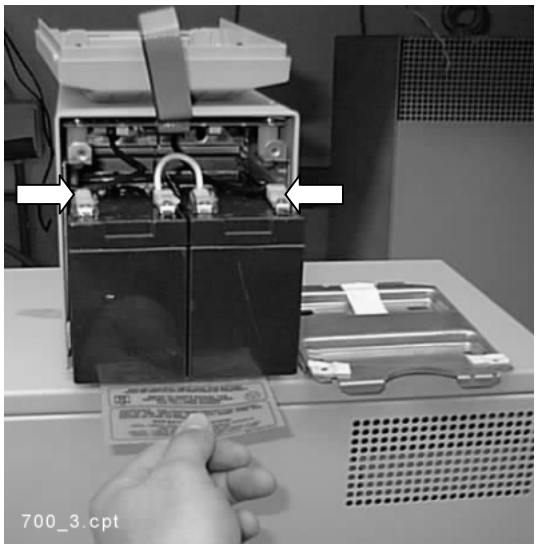
- Disconnect the two battery leads (white arrows) and remove the batteries.
- Insert the new batteries and connect the battery leads
  (red wire + , black wire -).
- Re-assemble the UPS in reverse order as described before

- Dispose the old batteries properly at an appropriate recycling facility or return it to the supplier in the packing material of the new battery .

9.3 Battery Replacement Procedure for UPS AP 700

- pull away the front cover (no tools needed).

- loosen two screws of the battery housing (white circles) with a Phillips screwdriver.



- take the two batteries out of the housing by pulling at the tab (see hand).
- disconnect the two battery leads (white arrows).
- insert the new batteries and connect the battery leads
  (red wire + , black wire -).
- re-assemble the UPS in reverse order as described before.

- Dispose the old batteries properly at an appropriate recycling facility or return it to the supplier in the packing material of the new battery .